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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,939	06/30/2000	Takahiro Kimura	Q59907	8452

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EXAMINER
FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
1733	16

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/606,939	Applicant(s) KIMURA ET AL.	
	Examiner Justin R Fischer	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-10 and 13-18* is/are rejected.

7)☒ Claim(s) *2,3,11 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). *8,9* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-3 and 5-18, drawn to a pneumatic tire having a specific carcass turnup structure, classified in class 152, subclass 552.

   II. Claim 4, drawn to a method of forming a carcass turnup structure, including the plastic deformation of the carcass ply, classified in class 156, subclass 133.

2. Newly submitted claim 4 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: invention I is directed to a pneumatic tire having a wind contact portion along the outer periphery of the bead core while invention II is directed to a method of forming said wind contact portion by plastically deforming the carcass ply in at least those positions that correspond to the bead core ends. The specific method of invention II represents a unique way of shaping or treating the carcass ply and is not required by invention I, and as such, the inventions each have a unique and separate means for establishing patentability. It is further noted that the pneumatic tire structure of invention I can be formed by winding the carcass ply around the bead core in the conventional manner, wherein a "plastic deformation" step is not practiced.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for

prosecution on the merits. Accordingly, claim 4 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3 and 5-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-3 and 5-18, the language "in the vicinity of a main body of the carcass ply other than the wound portion thereof at an outer peripheral position of the bead core" appears in lines 5-7 of claim 1. This language does not provide a clear and concise description of the claimed invention, rendering the claims indefinite. It appears that applicant is intending said language to require that the terminal end of the carcass ply extends over or is placed over the outer peripheral surface of the bead core, as depicted in Figures 2-10. It is unclear what limitation "other than the wound portion thereof" contributes to the description of the claimed invention. It is suggested that applicant clearly define the location of the terminal end of the carcass ply, as previously set forth, without the introduction of new matter.

As per claim 6, applicant describes a distance between cords that ranges from 1.00 to 1.50 millimeters. As currently drafted, it is unclear exactly what dimension or distance the claim is defining (i.e. center-to-center or cord end to cord end). It is the examiner's position that the dimension is defining the distance between cord ends and not the center-to-center distance. As such, this definition will be applied for examination purposes.

Regarding claim 10, the language "the organic fiber chafer" appears in line 2. There is insufficient antecedent basis for this limitation in the claims as currently drafted. It is noted that claim 10 is dependent from claim 9, wherein "at least one organic fiber chafer" is introduced. It is suggested that applicant adopt this language to remain consistent throughout the claims and provide a clear and concise description of the claimed invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 7-10, and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda (JP 01030808, newly cited) in view of Ochiai (US 5,029,627, newly cited). As best depicted in Figure 3, Maeda is directed to a heavy duty radial ply tire comprising a pair of bead portions, a pair of sidewalls, a bead reinforcing layer 7, and at least one carcass ply 4, such that said carcass ply has a turnup portion that

contacts the outer peripheral surface of the bead core. The reference, however, is completely silent with respect to the specific cord material used in said bead reinforcing layer. In any event, it is well known and conventional to use steel reinforcing elements in bead reinforcing layers, especially in heavy duty tires, due to their high strength properties, as evidence for example by Ochiai (Column 3, Lines 40-45). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the bead reinforcing layer of Maeda out of conventional, steel reinforcing elements in view of Ochiai, as set forth above.

It should additionally be noted that applicant requires the carcass be composed of steel reinforcing elements. Maeda states that several materials are conventionally used in the manufacture of carcass plies in heavy-duty tires, including nylon, polyester, and steel. In the preferred embodiment, Maeda states that the carcass structure is formed of polyamide fiber cords; however, this design is exemplary and one of ordinary skill in the art at the time of the invention would have readily appreciated the use of additional materials, such as steel, it being noted that Maeda does state that steel provides superior strength properties (this information was obtained from a USPTO translator).

Regarding claim 7, a Z lay outer sheath structure defines a well known and conventional cord design in the tire industry. Furthermore, applicant has failed to provide any unexpected results to provide any criticality for the claimed cord construction. As such, one of ordinary skill in the art at the time of the invention would

have readily appreciated and expected the bead reinforcing layer of Maeda to be formed with a Z lay outer sheath structure in view of Ochiai.

As per claim 8, applicant requires that the start end and terminal end of the bead reinforcing layer be positioned with respect to the rim line position and a normal line drawn from the outermost point of the bead core to the outer surface of the bead portion, respectively. In this instance, Maeda depicts the start end as being approximately at a radial position that is equal with the half height of the bead core. Although the reference fails to depict a "first rim line position", it is known that said "first rim line position" is in the vicinity of the rim flange height and as such, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the start end of the bead reinforcing layer of Maeda to fall within the range of the claimed invention. Also, applicant has failed to provide any unexpected results to provide a criticality for the claimed range. Regarding the terminal end of said bead reinforcing layer, Maeda depicts the terminal end at a position that is slightly above the rim flange, which suggests that is in close proximity to the "first rim line position". While it is unclear if Maeda suggests a terminal end that is radially inward of said "first rim line position", it is clearly evident that such an embodiment would have been obvious to one of ordinary skill in the art at the time of the invention, there being no unexpected results in the original disclosure to suggest a criticality for the claimed arrangement of said terminal end.

With respect to claim 9, it is well known and conventional to include organic fiber chafers in bead portions to eliminate the buildup of stresses and optimize the bead

reinforcement. For example, Ochiai is directed to a similar heavy duty tire (as compared to Maeda) having a steel carcass structure and at least one steel bead reinforcing layer. Ochiai further suggests the use of an organic cord layer that is disposed axially outward of the carcass turnup portion, as required by the claimed invention. One of ordinary skill in the art at the time of the invention would have been motivated to include a conventional organic fiber cord layer in the tire structure of Maeda for the reasons set forth above.

As per claim 10, although Ochiai does not specifically define the inclination angle of the organic fiber cords, the broad range of the claimed invention defines a conventional bead reinforcing ply structure. It is noted that Ochiai suggests an angle between 20 and 70 degrees for the reinforcing elements in the bead reinforcing layer, such that one of ordinary skill in the art at the time of the invention would have expected the reinforcing elements in the organic fiber cord layer to have a similar inclination.

With respect to claims 13-18, Figure 3 of Maeda depicts the claimed positioning of the bead reinforcing layer in relation to the bead core and the carcass structure.

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda and Ochiai, as applied to claim 1 above, and further in view of Kobayashi (US 5,261,476, of record). Maeda and Ochiai are applied for the same reasons set forth in the previous paragraph. The references, however, are silent with respect to the cord diameter and cord spacing in said bead reinforcing layer. In any event, the range of 1.0-1.5 millimeters for the cord diameter and the cord spacing is conventionally used in similar reinforcing plies, as evidence for example by Kobayashi (Column 5, lines 54-55).

Though the cord spacing is not addressed, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the cord spacing to be approximately equal to the cord diameter. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a steel cord reinforcing layer having the construction of the claimed invention in view of Kobayashi, as set forth above.

Allowable Subject Matter

9. Claims 2, 3, 11, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claims 2 and 3, there was no reference in the prior art search that suggested a pneumatic tire construction having, in addition to the fundamental tire components (sidewall, tread, beads), (a) a carcass structure formed of a main portion and a turnup portion, wherein said turnup portion contacts the outer peripheral portion of the bead core and (b) a pair of steel cord reinforcing layers that sandwich said main carcass portion, such that a terminal end of an axially outermost reinforcing layer is located away from the terminal end of the carcass ply. While it is recognized that the claimed bead reinforcing structure (main carcass portion between a pair of steel bead reinforcing layers) is well known in the tire industry, one of ordinary skill in the art at the time of the invention would not have found it obvious to make such a modification because said bead reinforcing structure has a specific relationship with the unique carcass turnup portion of the claimed invention.

As per claims 11 and 12, there was no reference in the prior art search that suggested a pneumatic tire construction having, in addition to the fundamental tire components (sidewall, tread, beads), (a) a carcass structure formed of a main portion and a turnup portion, wherein said turnup portion contacts the outer peripheral portion of the bead core and (b) a cushion rubber layer between a steel bead reinforcing layer and the main carcass portion in the vicinity of the start end of said steel bead reinforcing layer. In this instance, although Maeda depicts a bead reinforcing layer in accordance to the limitations of independent claim 1, the start end of the reinforcing layer does not extend along the main portion and furthermore, the reference makes no suggestion as to use any rubber in addition to that formed by the topping rubber of the carcass ply and the bead reinforcing laminate.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Justin Fischer

August 9, 2002

Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700